Delta Regional Monitoring Program

FY17/18 Detailed Workplan and Budget

As approved by the Delta RMP Steering Committee on May 3, 2017

AQUATIC SCIENCE CENTER

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Introduction

The purpose of this document is to provide the Steering Committee (SC) with a Detailed Workplan for FY17/18 Delta RMP budget.

For the upcoming year, the overall budget is slightly larger than the previous fiscal year. Thanks to slightly higher anticipated revenues coming from a growing number of Delta RMP participants, we have planned a modest increase in expenditures from the previous two fiscal years. Planned expenditures for FY17/18 is $1,182,425, which includes $205,600 in in-kind support from the Central Valley Regional Water Quality Control Board. Planned expenses for FY16/17 were $1,053,030 (which included $254,145 from the Water Board). This year's planned expenses are greater than last year's by $166,190, representing a 15% growth in the program's planned expenses.

Earlier this year, the technical subcommittees (i.e., mercury, pesticides, nutrients, and pathogens subcommittees) developed study proposals consistent with the planning budgets and the monitoring design. The FY17/18 study proposals were vetted by the respective subcommittees and brought to the Technical Advisory Committee (TAC) on March 14, 2017. The subcommittees worked to develop proposals that are consistent with:

- the multi-year plan presented at the December 2015 SC meeting;
- feedback received by the 2016 External Review Panel;
- Data Quality Objectives being developed for each monitoring area.

The TAC reviewed and prioritized the scientific studies based on the planning budget for monitoring and special studies. ASC then prepared this detailed workplan for the recommended studies and core functions of the program.

This report summarizes the:

- Expected revenue for FY17/18;
- A detailed budget and workplan for the core functions of the program;
- A detailed budget and workplan for monitoring and special studies; and
- The overall FY17/18 Delta RMP budget.

This Detailed Workplan will be submitted for approval by the Steering Committee on May 3, 2017.

Anticipated Revenue

On January 26, 2017, the SC voted for a zero percent fee increase for existing participants for FY17/18. Contributions from continuing participants amounts to $787,782. As of this writing, the State and Federal Contractors Water Agency (SFCWA) has confirmed that it is not likely to contribute to the Delta RMP. SFWCA has contributed $100,000 per year for each of the last 3 years. Because we are unlikely to receive these funds, we have **not** included their contribution under expected revenue for FY17/18. There are two confirmed new participants, who will be contributing to the Delta RMP for the first time in FY17/18 (City of Modesto and Sutter County), for a gain of an additional $25,700. Finally, expected revenue includes $205,600 of in-kind support from the Central Valley Water Board via funding from the Surface Water Ambient Monitoring Program (SWAMP). Therefore, the total anticipated revenue for FY17/18 is **$993,382**.

Some of the Delta RMP funds are in-kind, such as a State Board contract with UC-Davis for toxicity testing (the "SWAMP Contract"). These in-kind funds are treated as revenue but are not fungible. They cannot be used for more than one purpose. For example, the SWAMP contract funds can only be used for toxicity testing.

It is likely that additional revenue will become available later in FY17/18. In March 2017, the Central Valley Regional Water Quality Control Board issued 13267 Orders to 12 communities, offering them the option of participating in the Delta RMP as a condition of their stormwater discharge (MS4 Phase II) permits. As of the date this budget was prepared, only one of these 12 communities has confirmed that it will participate in the program and contribute to the RMP. If the other 11 communities join the program, it would likely mean an estimated additional $110,000 in revenue. However, because we are not certain to collect this revenue, we have not included it in our revenue forecast. Further, if SFWCA's board decides to authorize funding for the RMP, it would mean another $100,000 in funds.

The number of Delta RMP participants has steadily grown over the life of the program, as shown below. If, as noted above, SFWCA elects to contribute at the level they have in the past, it would mean a *growth* in contributions by participants of +6%. If not, there may be a decrease in revenue.

Fiscal Year	Number of Participants		Contributions by Participants	
FY 15/16	33		$751,733	
FY 16/17	35	+6%	$862,082	+15%
FY 17/18	37	+6%	$787,782	–9%

Below, Table 1 summarizes the expected revenue for FY17/18, summarized by category of participant. Figure 1 shows revenue growth by participant category, showing actual revenue for FY15/16 and FY16/17 and expected revenue for FY17/18.

Table 1 Delta RMP FY17/18 Revenue Schedule

Participant	FY15/16 Actual	FY16/17 Actual	FY17/18 Forecast	Comment
Regional Board	$212,855	$254,145	**$205,600**	In-kind contribution via the SWAMP program 3-year contract.
Dredgers		$60,000*	**$60,000**	New participant category in FY16/17
Irrigated Lands	$113,780	$148,780	**$148,780**	
Stormwater (MS4 Phase 1)	$158,200	$158,200	**$181,400**	The City of Modesto will join the Delta RMP in FY17/18, contributing $23,200. Only counts communities whose participation has been confirmed in writing.
Stormwater (MS4 Phase 2)	$169,999	$189,999	**$192,499**	El Dorado County joined in FY16/17, for $20,000. Sutter County will join in FY17/18, for $2,500.
Wastewater	$209,754	$205,103	**$205,103**	The City of Discovery Bay did not participate in the RMP in FY16/17, resulting in a drop in revenue. We have not included their contribution as expected revenue for FY17/18.
Water suppliers (SFCWA)	$100,000	$100,000		As of this writing, SFWCA contribution to the Delta RMP in FY17/18 is under discussion, pending approval of their Board, hence we have not included their contribution in our planned revenue.
Total	**$964,588**	**$1,040,878**	**$993,382**	

* Revenue from dredgers in FY16/17 includes funds that have been invoiced but not received as of this writing.

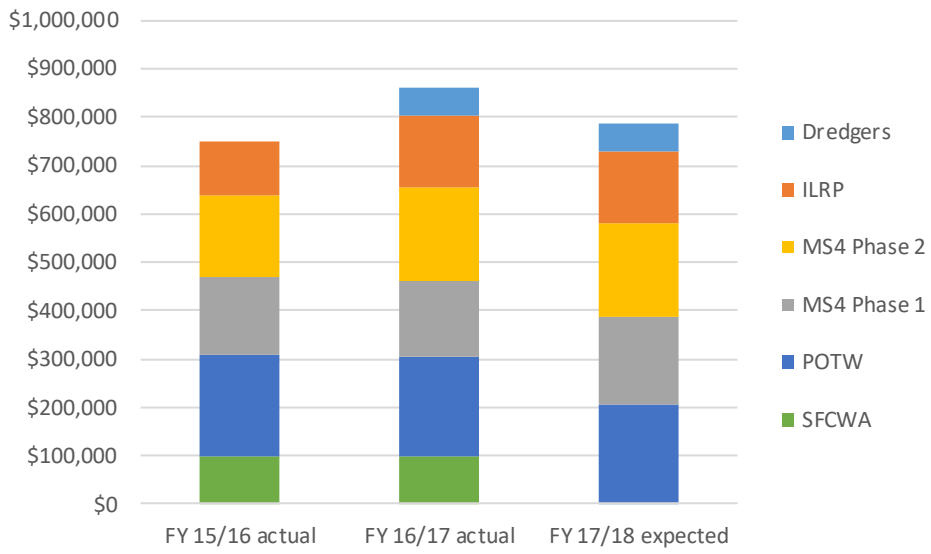

Figure 1 Bar chart of revenue growth by participant category, showing actual revenue from FY15/16 to FY16/17 and expected revenue for FY17/18.

Program Core Function Expenses

Delta RMP expenses fall into two categories: core function expenses associated with administering a multi-faceted, stakeholder-driven, monitoring program; and special studies and monitoring to answer Delta RMP management questions. This section details the core function expenses for FY17/18.

The core function budget includes the following categories of tasks:

- Preparation of Program Planning Documents (e.g., Workplan, Monitoring Design)
- Contracts and Financial Management
- Governance
- Quality Assurance and
- Communications

The bar chart in **Figure 2** shows how the proposed program budget for FY17/18 compares to budgets for the past two fiscal years. In addition, **Table 2** shows how the planned core function budget for FY17/18 compares to the previous fiscal year, both in terms of the number of hours of staff time and total expense. The planned budget for core functions is $35,504 larger than the core functions budget for FY/16/17 of $304,100, an increase of 12%. Part of the cost increase is due to the normal escalation in costs: cost of living adjustments (i.e. staff raises) and cost increases due to inflation. However, the main reason for the increase is that we have set more ambitious targets, and plan several new areas of work, indicated in the addition of four new budget line items, detailed below.

- **Task 2D, Technical Subcommittees ($20,000).** This is intended to cover ASC staff time to organize and participate in technical subcommittee meetings. This is an important part of program planning and monitoring design, and a key part of our strategy to respond to the critiques of the 2016 External Review Panel. Even though Task 2D is a new budget item, it does not represent at new cost to the Program. The cost to do this work in FY16/17 was billed to the TAC budget line, which went over budget. We are creating this new budget line to split out the costs for subcommittee work from TAC work to more accurately account for effort on these two different tasks.

- **Task 2E, Science Advisors ($10,000)** will pay the honoraria and travel for 2 to 4 independent science advisors. The External Review highlighted the value of having independent scientists involved with monitoring design planning. Ultimately, the Program would benefit from having a Chief Scientist to guide the program and to efficiently integrate feedback from the TAC. However, there is insufficient revenue to support a Chief Scientist without scaling back monitoring efforts. Therefore, as an alternative, we recommend paying honoraria to a few independent science advisors on specific topics (e.g., pesticide monitoring design). The advisors would be selected by the Steering Committee with input from the TAC and would commit to a 3-4 year term. Having advisors work with

the Program over multiple years is efficient because they will become familiar with the Program and be able to help with adaptive management and review technical reports. The Bay RMP uses this approach to have ongoing, independent peer review of plans and final reports.

- **Task 4B Draft the Pulse of the Delta ($40,000)** is to begin drafting the *Pulse of the Delta report*. In the Communications Plan, there is a placeholder for a *Pulse of the Delta* report to be released in fall 2018 at the State of the Bay Delta Science Conference. A *Pulse* document typically requires having 3-4 technical reports completed and approved by the Steering Committee a 9-12 months in advance, after which the Steering Committee works on high level messaging. The Delta RMP will not have enough technical reports in time to justify a *Pulse* report. However, a "Pulse lite" report would be achievable and would be helpful to raise the profile of the Program at the conference. Writing a *Pulse* report would also give the Steering Committee and TAC the opportunity to craft a consensus message about water quality in the Delta. In general, the report would summarize the Delta RMP's management questions, efforts during the first 3 years, and future plans. For an example see the *RMP Update* report produced by the Bay RMP (www.sfei.org/rmp/update). The funds budgeted in FY17/18 would be sufficient to develop a detailed outline with RMP committees, prepare a comprehensive budget and schedule, engage authors, and start work on the report. Depending on the scope of the report chosen by the Steering Committee, additional funds may need to be allocated, either from Reserve or in the FY18/19 budget, to complete the whole report. See Appendix D for a more detailed description of this product.

- **Task 4A Stakeholder Board Meetings ($10,500)** is for ASC staff to provide support to the Delta RMP co-chairs and others to meet with stakeholders' Boards of Directors to present information about the value of the Program. These meetings can be with existing participants or potential future participants. Maintaining good relationships with existing participants and recruiting new participants is a critical fundraising activity that was not funded in past years. These meetings are also a critical communication link for ensuring that the Program is meeting the needs of participants.

If the new costs for the four new tasks is removed, the budget for core functions in FY17/18 is actually $15,000 *lower* than last year. Part of the reason is that we have carefully considered staffing needs for the project, and plan to make greater use of junior staff and administrative staff (with lower hourly rates) for certain functions. For example, we have arranged to contract with an administrative professional to take notes and to prepare meeting summaries at meetings of the TAC and Steering Committee. This is significantly less expensive than using an ASC Environmental Scientist for this job.[1] In other cases, data analysis, report writing, and

[1] For an estimated 12 hours per meeting, and 8 meetings per year at $40 per hour, this represents a savings to the program of approximately $9,000 compared to the fully loaded rates for a mid-level ASC Environmental Scientist.

preparing of maps, figures, and tables can be done by ASC Environmental Analysts, or junior staff members. In all cases, we have budgeted what we believe is sufficient time by Senior Environmental Scientists to provide guidance and oversight, and be responsible for technical deliverables. In short, the core budget has been planned to do a great deal more with only a modest price increase.

There are a number of tasks which we did **not** include in the FY17/18 budget because there was insufficient revenue and we deemed them to be lower priority. These tasks would benefit the program in the long-term but are not crucial for this year.

- **Update to the Monitoring Design Document** – Updating the Monitoring Design document is a major undertaking. As a result of the External Review recommendations, major changes are being made to the monitoring programs. It would be ideal update the Monitoring Design document at the same time to keep it from becoming obsolete. However, some of the recommended monitoring activities are being conducted as pilot studies. The long-term monitoring design may change again based on the results of these pilot studies. Each of the FY18/19 studies have detailed plans (see attachments to this document) that can serve as an interim Monitoring Design. In the response to the External Review, the co-chairs stated that the Monitoring Design document would be updated in 2020, which would be 5 years after the first version. In order to avoid unnecessary extra costs, we recommend updates to the Monitoring Design document be delayed until the FY19/20 budget.
- **Factsheets and Outreach Products** – not essential as we have created a new factsheet in FY17/18 that should serve the program for at least a year.
- **Workshops and Technical Meetings** – While there are no workshops planned at the moment, the Steering Committee may wish to revisit this following the scoping of work related to Harmful Algal Blooms (HABs) or as other needs arise.
- **Presentations and Conferences and Meetings** - while desirable to help publicize the accomplishments of the program and encourage data sharing, it was felt that the time will be ripe for this in the next fiscal year after more data has been collected, more work has been done to analyze and synthesize these results, and once the technical committees and Steering Committee have met to develop key messages. Presentations can also build off of forthcoming reports such as the Current Use Pesticides (CUP) interpretive report and the *Delta RMP Update.*

Full details about the labor, subcontract, and direct costs as well as the deliverables to be accomplished for each of the Core Functions tasks are provided in Table 3.

Table 2 Delta RMP FY17/18 Core Function Budget.

	FY16/17 Projected Staff Hours*	FY17/18 Planned Staff Hours	FY16/17 Budgeted Expenses	FY16/17 Projected Expenses*	FY17/18 Budgeted Expense
1. Core Functions					
A. Program Planning	525	528	$76,000	$66,991	$65,000
B. Contract and Financial Management	464	480	$52,000	$51,298	$54,000
External Review Response	75	–	$10,000	$10,529	–
	1,064	**1,008**	**$138,000**	**$128,800**	**$119,000**
2. Governance					
A. SC meetings	270	272	$51,300	$38,544	$48,484
B. TAC meetings	453	304	$64,800	$77,714	$61,620
NEW: C. Technical Subcommittees	–	152	–	–	$20,000
NEW: D. Science Advisors	–	–	–	–	$10,000
	723	**728**	**$116,100**	**$116,258**	**$140,104**
3. Quality Assurance					
A. Quality Assurance System	106	104	$15,000	$12,966	$15,000
B. Technical Oversight and Coordination	62	88	$15,000	$14,065	$15,000
	168	**192**	**$30,000**	**$27,031**	**$30,000**
4. Communications					
Factsheet	32	–	$5,000	$2,700	–
Technical Workshop	114	–	$15,000	$0	–
NEW: A. Stakeholder Board Meetings	–	68	–	–	$10,500
NEW: B. Delta RMP Update Draft	–	312	–	–	$40,000
	146	**380**	**$20,000**	**$2,700**	**$50,500**
Grand Total	**2,101**	**2,308**	**$304,100**	**$274,789**	**$339,604**

*FY16/17 Projected staff hours includes hours billed to date plus our best estimate of the number of hours to complete tasks.

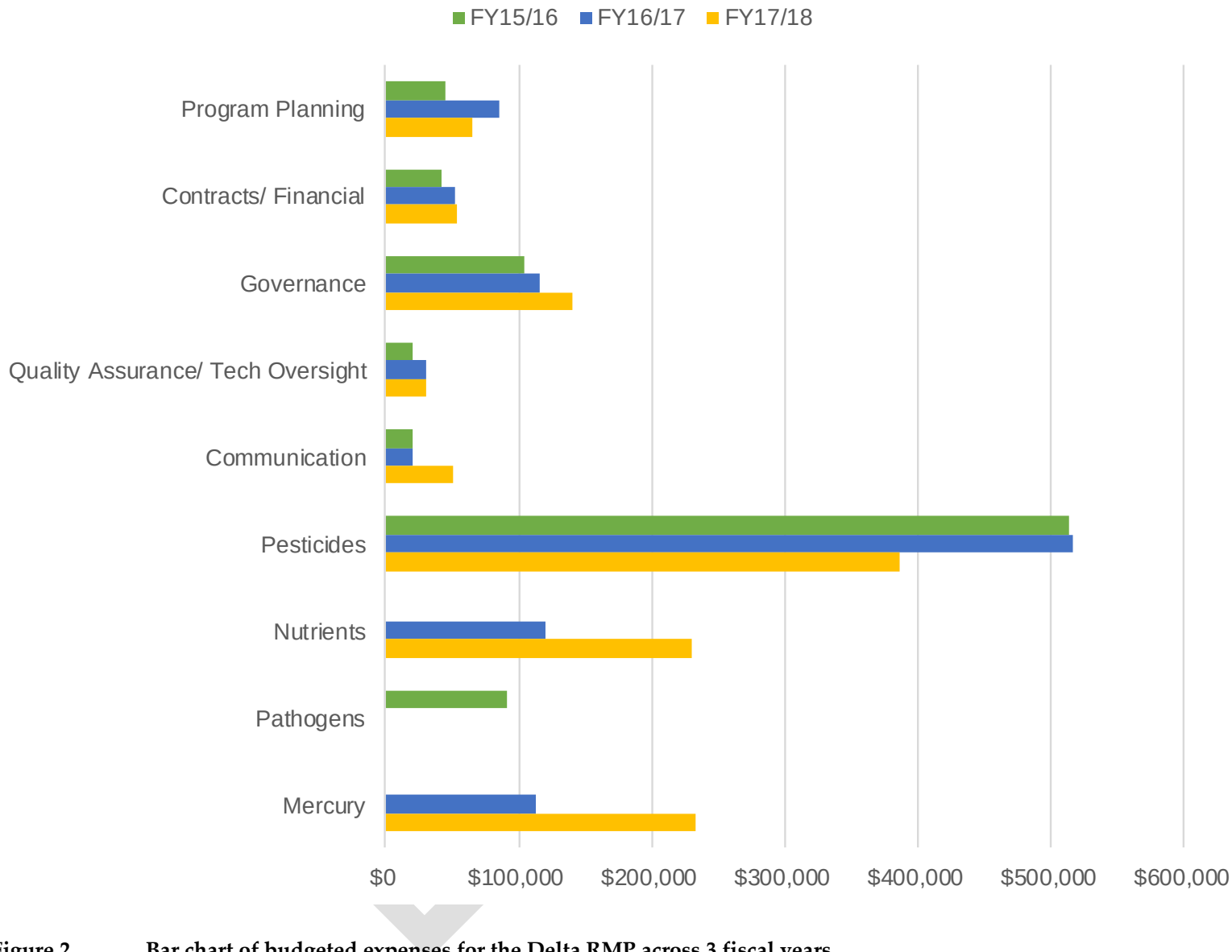

Figure 2 **Bar chart of budgeted expenses for the Delta RMP across 3 fiscal years.**

Table 3 Delta RMP FY17/18 Programmatic Task Descriptions, Budget Justifications, and Deliverables.

Task	Subtask	Budget	Description	Budget Justification	Deliverables
1. Program Management	A. Program Planning	$65,000	Preparing annual workplan/budgets, updating foundational documents including Multi-Year Plan, Annual Workplan, and Monitoring Design. Coordinate activities among stakeholders via e-mail and telephone calls, tracking deliverables. Preparing scopes for Supplemental Environmental Projects	80 hours for Program Manager to produce the Annual Workplan and Budget. 170 hours (3.5 hrs/wk) for Program Manager to update Multi-Year Plan, Charter, and Communication plan. 240 hours (4.6 hr/wk) for technical staff to contribute to workplans, follow up on action items, and update program documents. 60 hours for Program Director (1.2 hr/wk) to provide oversight and continuity.	FY18/19 Annual Workplan and Budget (June 2018). Amended Charter and Communication Plan if needed. Quarterly reports on deliverables and action items.
	B. Contract and Financial Management	$54,000	Tracking expenditures versus budget. Providing quarterly financial updates to the Steering Committee. Developing contracts and managing subcontractors. Invoicing program participants.	Approximately 5% of assets under management. 240 hours for Contracts Manager (4.8 hr/wk) and 72 hours for accountant. 120 hours for Program Manager (2.4 hr/wk) and 40 hours for Program Director to provide oversight (3 hr/wk). Tasks include issuing invoices and subcontracts, checking on subcontracts and finances weekly. $1,000 for direct costs, direct costs e.g., shipping, courier, supplies.	Quarterly updates on FY17/18 Budget provided in the SC agenda package. Contract management.

Task	Subtask	Budget	Description	Budget Justification	Deliverables
2. Governance	A. SC meetings	$48,484	Preparing agendas, agenda packages, participating in meetings, writing meeting summaries, following up on action items, meeting with co-chairs and stakeholders in preparation for SC meetings/follow-up.	4 meetings per year. For each meeting: 40 hours for Program Manager, 16 hours for Program Director, and 12 hours for Environmental Scientist. Travel from Richmond to Sacramento ($125/meeting). Facilitation services by Brock Bernstein (quote: $10,064) Note-taking and summary of SC meetings by Daphne Orzalli (quote: $1,920).	4 Steering Committee meetings and meeting summaries. 8 teleconferences with the Coordinating Committee.
	B. TAC meetings	$61,620	Preparing agendas, agenda packages, participating in meetings, writing meeting summaries, following up on action items, meeting with co-chairs and stakeholders outside of meetings. Facilitation of TAC subcommittee meetings as needed. The cost for this function assumes that MEI and USGS continue to serve as co-chairs of the TAC, with ASC serving in a coordination role. As discussed with the Finance Subcommittee and TAC, ASC and MEI will avoid duplication of effort.	4 meetings per year. For each meeting: 28 hours for Program Manager, 8 hours for Program Director, and 40 hours for Environmental Scientist. Travel from Richmond to Sacramento ($125/meeting). McCord Environmental (MEI) paid chair (quote: $19,200). Note-taking and summary of SC meetings by Daphne Orzalli (quote: $1,920).	4 TAC meetings and meeting summaries. 4 pre-calls with the TAC Chairs.

Task	Subtask	Budget	Description	Budget Justification	Deliverables
	C. Technical Subcommittees	$20,000	Organizing and facilitating the meetings and decisions of the technical subcommittees on Nutrients, Pesticides, Mercury, and potentially Harmful Algal Blooms (HABs). Preparing agendas, agenda packages, participating in meetings, writing informal meeting summaries with action items as necessary, following up on action items, meeting with co-chairs and stakeholders outside of meetings.	8+ meetings per year. For each meeting: 7 hours for Program Manager, 2 hours for Program Director, and 10 hours for Environmental Scientist.	8 Subcommittee meetings and informal meeting summaries.
	D. Science Advisors	$10,000	Science Advisors would be independent scientists who would agree to review documents and proposals. With the funding requested, 2-4 scientists with expertise in a few specific areas would be hired.	Honoraria and travel (subject to negotiation, but typical honoraria of $2,000 to review documents and consult 4+ times per year). Travel to attend SC or TAC meetings plus rental car and hotel.	Participation of 2–4 science advisors.
3. Quality Assurance	A. Quality Assurance System	$15,000	Updating the *Quality Assurance Project Plan* to cover the FY18/19 workplan and incorporating any changes from the revised Monitoring Design, writing Quality Assurance Reports for datasets, coordinating inter-laboratory comparison tests (as needed), researching analytical methods, maintaining laboratory SOP file system.	40 hours for ASC QA Officer. 16 hours for ASC senior chemist. 32 hours for Environmental Scientist, and 32 hours for Environmental Analysts.	Revisions to QAPP (June 2018).
	B. Technical Oversight and Coordination	$15,000	Trouble-shooting technical issues associated with TIE, pesticide, and mercury monitoring. This budget line also covers time for Senior Scientists to review draft reports and advise junior staff..	48 hours for technical staff (12 hours per quarter). 40 hours for ASC Senior Scientists (nutrients/Hg) (10 hours per quarter).	

Task	Subtask	Budget	Description	Budget Justification	Deliverables
4. Communications	A. Stakeholder Board Meetings	$10,500	Program staff will conduct outreach by meeting with the staff or Boards of wastewater agencies, City Councils, etc. to describe the mission and purpose of the Delta RMP, accomplishments, and the benefits of participation.	12 hours for ASC Senior Scientist. 40 hours for Program Manager. 16 hours for Program Director.	3-5 presentations to or meetings with the Boards or Staff of member agencies.
	B. *Delta RMP Update* Draft	$40,000	The *Delta RMP Update* report would summarize the Delta RMP's management questions, efforts during the first 3 years, and future plans. The funds budgeted in FY17/18 would be sufficient to develop a detailed outline with RMP committees, prepare a comprehensive budget and schedule, engage authors, and start work on the report. Depending on the scope of the report chosen by the Steering Committee, additional funds may need to be allocated, either from Reserve or in the FY18/19 budget, to complete the whole report.	40 hours for ASC Senior Scientist. 80 hours EACH for Program Manager, Environmental Analysts, and Environmental Scientists. 32 hours for Program Director.	Draft document to be finalized in Fall of 2018 (FY18/19).
	Total	**$339,604**			

Expenses for Monitoring and Special Studies

The FY17/18 Workplan implements monitoring designs of the priorities proposed for the initial phase of the Delta RMP (e.g., current use pesticides, nutrients, and mercury). At this time, no studies are being proposed for pathogens. The FY17/18 study proposals were developed in collaboration with the respective subcommittees and brought to the TAC on March 14, 2017. The TAC reviewed and prioritized the scientific studies based on the planning budget for monitoring and special studies. The TAC recommendations are summarized below.

The tasks to be completed, subcontractors, and deliverables for these tasks are described briefly below and in detailed monitoring proposals attached as appendices to this document:

Appendix A: Mercury
Appendix B: Nutrients
Appendix C: Pesticides
Appendix D: Reporting

The monitoring designs in the appendix include details for each project including:

- Background and motivation
- Applicable management decisions and assessment questions
- Approach -detailed description of the project and who is going to do it, including parameters, sampling design, and subcontractors
- Data Quality Objectives
- Reporting/deliverables
- Budget

The total cost for the monitoring programs amounts to $782,821. This cost is broken down as $233,561 for mercury, $230,000 for nutrients, and $319,260 for pesticides. Each of these focus areas had a planning budget of $250,000 for FY18/19. The cost of the pesticides proposal exceeds the planning budget. However, the pesticides subcommittee has stated that the two planned monitoring components complement each other in their approach to addressing management and assessment questions and recommends that both be completed in FY17/18. **Table 4** summarizes the budgeted cost of each of the planned monitoring programs.

Mercury

Mercury monitoring in FY17/18 will collect samples of sport fish, water, and sediment in order to address the highest priority information needs related to implementation of the Methylmercury TMDL. The program builds upon FY16/17 by expanding monitoring from 4 months to 8 per year, sampling sport fish at the same 6 sites as in previous years, and expanding water measurement from 5 sites to 6 (adding water measurement at the Mokelumne River site). More frequent monitoring will provide essential evidence for regulators implementing the TMDL and contribute to ongoing analytical work by the California

Department of Water Resources (DWR), and which will be used to guide regulations and operational decisions related to farming, flood control, and wetland management.

Nutrients

Nutrients work will encompass a suite of 3 separate but related projects. The first, "Cross-Delta Monitoring Using High-Frequency Tools" ($195,000) will be carried out by scientists from the U.S. Geological Survey. This project will assess spatial variability of nutrients and related water quality constituents in the Delta at the landscape scale. The project will help to identify "hot spots" of nutrient transformation and to locate internal sources and sinks for nutrients within the Delta.

The second Nutrients project, "Continued Nutrient Data Analysis and Biennial Reporting" ($20,000) will be conducted by the Aquatic Science Center. The project will provide continued synthesis and integration of existing data to characterize status and trends of nutrient-related parameters and planning future monitoring and data analysis work. Major outcomes will be 1) convening up to 4 nutrient subcommittee science meetings, 2) completing data analysis and synthesis work funded in FY16/17, and 3) planning and initiating synthesis work for the biennial report to be completed in FY18/19.

The third Nutrients project, "Chlorophyll Sensor Intercalibration" ($15,000) is a joint effort with San Francisco Bay Nutrient Management Strategy. The proposed funds will bring the Delta networks into this effort and enable the Delta RMP to provide input. The chlorophyll sensor intercalibration study will be a significant first step toward ensuring improved sensor network coordination, and was a key recommendation from the September 2016 Delta RMP Nutrient Monitoring Workshop that will help make better use of existing data collection efforts by state and federal agencies.

Pesticides monitoring projects were not approved by the Steering Committee on May 3, 2017 and will be reconsidered in July 2017.

Pesticides

Two Pesticides projects are planned. The first, "Aquatic Toxicity at an Integrator Site" ($178,527) evaluates pesticide-related toxicity at the Sacramento River at Hood. This is a key indicator site that represents the integration of a large watershed prior to entering the Delta. Water pumped from the river would run through on-site tanks (called ex-situ exposure) with the salmonid Rainbow Trout *Pimephales promelas* and the invertebrate *Hyalella azteca*, for critical time periods. After the determined exposure time, the exposed test organisms will be assessed for standard lethal and sub-lethal endpoints (survival, growth, behavioral), with samples from surviving organisms archived for future biomarker analyses as funding becomes available. In the laboratory, chronic *Ceriodaphnia dubia* and *Selenastrum capricornutum* toxicity tests will be conducted and timed to be concurrent with each ex-situ exposure event. Chemical analyses will be included to help identify chemicals causing observed toxicity.

For this pesticides monitoring project (*Aquatic Toxicity at an Integrator Site),* staff of the State Water Resources Control Board will take full responsibility for data management, a role that has

been fulfilled by ASC in the past. State Board staff have agreed to complete all of the same tasks that fall under the heading of data management, to include the following tasks:

- Check the data against the Measurement Quality Objectives (MQOs) in the Delta RMP Quality Assurance Program Plan (QAPP)
- Prepare a memo documenting the QA samples and any non-conformances
- Present the results to the Pesticides Subcommittee with an opportunity for discussion.

The second Pesticides project, "Pesticides Regional Assessment, Delta Tributaries" ($125,733) will conduct monitoring to characterize conditions (are pesticide concentrations greater than water quality benchmarks?) and trend ("is the needle moving due to regulatory and related management actions?") at 2 targeted representative sites. The approach will be to use four lines of evidence for evaluating if prioritized pesticides are potentially at levels of concern: a) toxicity testing, b) chemical analysis of water grab samples for TMDL pesticides (pyrethroids, chlorpyrifos, and diazinon) and comparison of concentrations of detected pesticides with thresholds of concern, c) deployment of passive sampling devices for chemical analysis for a longer list of pesticides based on output from the California Department of Pesticide Registration (CDPR) Surface Water Monitoring Prioritization model, and d) toxicity identification evaluations (TIEs).

An additional $15,000 is included in the Pesticides budget to cover additional planning and Data Quality Objectives (DQO) discussions before the first samples are collected in November 2017. Therefore, the Pesticide Subcommittee has requested additional meeting time during the first quarter of the FY17/18. These additional pesticide subcommittee meetings are required to finalize data quality, site selection, and other details of the monitoring design. This budget will allow ASC to prepare and facilitate 3 pesticide subcommittee meetings between July 1 and September 30, 2017 to finalize details of the monitoring designs.

Finally, $60,000 has been allocated to draft a *Current Use Pesticides (CUP) Year 1-2 Interpretive Report*. The Delta RMP Communication Plan calls for a technical report summarizing the first two years of current use pesticides monitoring. The outline for this report will be developed in collaboration with the Pesticides Subcommittee. We expect that a significant amount of time and effort will be required to develop the scope for this report, including what methods will be used to analyze and synthesize the data. We also believe that it will benefit from including the contributions of two or more co-authors, to bring an additional perspective and to help make sure the report is accepted by different stakeholder groups. This project is scalable. The not-to-exceed budget of $60,000 includes 2 honoraria of $10,000 each for two co-authors.

Contaminants of Emerging Concern (CECs)

The Delta RMP Steering Committee has expressed interest in developing a plan to monitor CECs. At this time, no funds have been allocated for this. The Steering Committee may wish to allocate funds from reserves or new funds that arrive mid-year to begin develop a monitoring plan for this are and set up a technical subcommittee.

Table 4 Summary of Delta RMP FY17/18 Monitoring and Special Studies

Project	Cost	
MONITORING		
Mercury		
Monitoring of water, fish, and sediment at 4 sites for 8 months		**$233,561**
Nutrients		
1. Cross-Delta Monitoring Using High Frequency Tools	$188,417	
2. Nutrient Data Synthesis and Reporting	$20,000	
3. Chlorophyll Sensor Intercalibration	$15,000	
Nutrients subtotal		**$230,000**
Pesticides		
Pesticide Projects Planning	$15,000	
1. Aquatic Toxicity at Indicator Sites (includes $155,427 from SWAMP)	$178,527	
2. Pesticides Regional Assessment, Delta Tributaries (includes $50,173 from SWAMP)	$125,733	
Pesticides Subtotal		**$319,260**
MONITORING TOTAL		**$782,821**
REPORTING		
Current Use Pesticides Year 1-2 Interpretive Report		**$60,000**
Grand Total		**$842,821**

*Represents the cost to the Delta RMP. Moss Landing Marine Laboratory (MLML) has pledged $25,000 as in-kind services for mercury field sampling and analytical work, making the total value of the project $258,561.

Subcontractors

Table 5 lists the subcontractors included in the Delta RMP FY17/18 workplan. Per the Delta RMP Charter, sole source justifications are provided in Appendix E for the two subcontracts greater than $50,000: U.S. Geological Survey and Moss Landing Marine Laboratory. The Aquatic Health Program Laboratory at UC Davis will conduct pesticides sampling, chemistry, and toxicity testing. This work is funded by the SWAMP program through a contract with the Central Valley Water Board. Therefore, we have not included a sole source justification here.

For contracts smaller than $50,000, we feel that it is not worth the additional expense to put these out for bid. The contractors and service providers listed below are experienced and familiar with the Delta RMP and the program's needs. For example, we plan to send pesticide samples to the Caltest analytical laboratory because it has a proven track record with the RMP as well as lower detection limits for certain parameters compared to competing labs in California.

Table 5 Subcontractors

Contractor	Budget Amount	Services
Moss Landing Marine Laboratory	$209,016	Mercury Monitoring – field data collection and laboratory analysis
U.S. Geological Survey	$195,000	Nutrients High-Frequency Mapping study
Aquatic Health Program Laboratory at UC Davis	$175,427	Aquatic Toxicity at an Indicator Sites (Pesticides Project 1) – field sampling, chemical and toxicity testing
McCord Environmental	$19,200	TAC Co-Chair
Brock Bernstein	$10,064	SC Facilitator
Daphne Orzalli	$3,840	SC and TAC meeting notes and summaries
Caltest analytical laboratory	$9,828	Pesticide analytical work. Assumes 18 samples at $455 each plus 20% lab quality assurance (e.g. blanks, duplicates).
TBD – Independent contractor to collect samples	$12,600	Expense estimate based on $700 per site per event x 18

Overall Delta RMP FY17/18 Budget

The programmatic and scientific budgets for the Delta RMP are shown together in Table 6 on the next page. The total planned expenses for the program in FY17/18 are $1,182,425. The work plan is "monitoring heavy", represents the priorities of the technical subcommittees, and incorporates feedback from the 2016 External Review. This plan also aims to begin providing more analysis, interpretation, and reporting of the data collected by the Delta RMP, in the form of two significant reports (Pesticides Interpretive Report, Pulse of the Delta) that are described in the Communication Plan.

However, the total expenses are greater than the assured revenue ($993,382) that has been committed. The potential shortfall is **$189,043.**

We recommend the Steering Committee consider the following approach for making up this shortfall so that the Program's budgeted expense remains within the assured revenue.

1. **Allocate All Reserve Funds**. The Reserve Fund currently has a balance of $106,347. We expect to add approximately $60,000 more to reserves at the end of the current fiscal year, the result of revenues from two new participants that began contributing in FY16/17. Using all of these reserve funds[2] would reduce the gap between revenue and expenses to **$22,696**.

2. **Decide on any items can be either scaled back, removed, or delayed.**

   The following programmatic and communications tasks are important but could be scaled back without disabling the Program.

2D. Science Advisors	$10,000
4A. Stakeholder Board Meetings	$10,500
4B. Pulse of the Delta Draft	$40,000
8. Current Use Pesticides Year 1-2 Interpretive Report	$60,000

   For example, the *Pulse of the Delta* could perhaps be postponed by one year. Stakeholder Board meetings could be reconceived so that ASC staff are providing support to the RMP co-chairs rather than participating in meetings themselves.

[2] The reserve fund can then be built back up as additional revenue comes in. For example, we expect approximately $112,500 in new revenue from new MS4 Phase II participants. If and when this additional revenue is collected, it will build up the reserve fund to slightly *above* the FY16/17 level.

Also, the proposed studies for pesticides exceeded the planning budget set by the Steering Committee by approximately $70k. Therefore, another option that the Steering Committee has is to delay one of these studies to bring the expense for this focus area closer to the planning budget.

Note that two of these studies include a significant cost share from SWAMP that covers toxicity lab work. However, any portion of SWAMP funds that the Delta RMP does not use in the next fiscal year can be rolled over to FY18/19. In terms of balancing the budget, the number if the far right column below ("Cost to the Delta RMP") is the expected savings on a cash basis.

	Total Cost	SWAMP Contribution	Cost to the Delta RMP
1. Aquatic Toxicity at Indicator Sites	$178,527	$155,427	$23,100
2. Pesticides Regional Assessment, Delta Tributaries	$125,733	$50,173	$75,560
Pesticides Projects Planning	$15,000	$0	$15,000

Table 6 Delta RMP FY17/18 Overall Budget

		Cost share (SWAMP)	Direct Cost	Labor	Subcntrct	Grand Total	Notes
01. Core Functions	A. Program Planning			$65,000		$65,000	See Table 3 for details and justification on Tasks 1 - 4
	B. Contract and Financial Management		$1,000	$53,000		$54,000	
01. Core Functions Total			**$1,000**	**$118,000**		**$119,000**	
02. Governance	A. SC meetings		$500	$36,000	$11,984	$48,484	
	B. TAC meetings		$500	$40,000	$21,120	$61,620	
	C. Technical Subcommittees			$20,000		$20,000	
	D. Science Advisors				$10,000	$10,000	
02. Governance Total			**$1,000**	**$96,000**	**$43,104**	**$140,104**	
03. Quality Assurance	A. Quality Assurance System			$15,000		$15,000	
	B. Technical Oversight and Coordination			$15,000		$15,000	
03. Quality Assurance Total				**$30,000**		**$30,000**	
04. Communications	A. Stakeholder Board Meetings		$500	$10,000		$10,500	
	B. Pulse of the Delta Draft			$40,000		$40,000	
04. Communications Total			**$500**	**$50,000**		**$50,500**	
05. Pesticides Monitoring Planning	A. Planning			$15,000		$15,000	
05. Pests Planning Total				**$15,000**		**$15,000**	
06. Aquatic Toxicity at an Indicator Sites (Pesticides Project 1)	A. Sample Collection and Lab Toxicity Analyses	$155,427				$155,427	AHPL[1] (SWAMP contract)
	B. Water Chemistry				$20,000	$20,000	USGS Lab at Sacramento State
	C. Data Management			$6,890		$6,890	ASC
	D. Technical Oversight and Reporting (ASC role)			$3,100		$3,100	ASC
06. Aquatic Toxicity Total		**$155,427**		**$9,990**	**$20,000**	**$185,417**	
07. CUP Regional Assessment (Pesticides Project 2)	A. Field Sampling				$12,600	$12,600	Contractor TBD

	B. Water Toxicity Laboratory Work	$42,913			$12,131	$55,044	AHPL (SWAMP Contract)
	C. Water Chemistry				$26,603	$26,603	USGS & CalTest
	D. TIEs	$7,260				$7,260	AHPL
	E. Data Management			$14,226		$14,226	ASC
	F. Reporting			$10,000		$10,000	ASC
07. CUP Reg. Assess. Total		$50,173		$24,226	$51,334	$125,733	
08. Year 1-2 CUP Technical Report	A. Report			$40,000	$20,000	$60,000	ASC
08. Total				**$40,000**	**$20,000**	**$60,000**	
09. Nutrients	A. Cross-Delta Monitoring Using High Frequency Tools				$195,000	$195,000	USGS[2]
	B. Nutrient Data Synthesis and Reporting			$20,000		$20,000	ASC
	C. Chlorophyll Sensor Intercalibration			$15,000		$15,000	ASC
09. Nutrients Total				**$35,000**	**$195,000**	**$230,000**	
10. Mercury Monitoring FY17/18	A Data Collection and Analysis				$209,016	$209,016	Moss Landing Marine Laboratory (see sole source justification in Appendix)
	B. RMP Data Management			$19,545		$19,545	ASC
	C. Technical Oversight			$5,000		$5,000	ASC
10. Mercury Total				**$24,545**	**$209,016**	**$233,561**	
Grand Total		$205,600	$2,500	$442,761	$538,454	$1,182,425	

[1]Aquatic Health Program Laboratory at UC Davis

[2]USGS budget for this project includes salary, supplies, analytical services, and operational costs for a vehicle and boat